

07-SC-04 – Science Laboratories Infrastructure, Project Engineering Design (PED), Various Locations

1. Significant Changes

These projects are being proposed as FY 2007 new starts.

2. Design, Construction and D&D Schedule

See subproject details.

3. Baseline and Validation Status

See subproject details.

4. Project Description, Justification and Scope

This project funds PED for two types of subprojects:

- Projects that renovate or replace inefficient and unreliable general purpose facilities (GPF) including general use, service and support facilities such as administrative space, cafeterias, utility systems, and roads; and
- Projects to correct Environment, Safety and Health (ES&H) deficiencies including deteriorated steam lines, environmental insult, fire safety improvements, sanitary system upgrades and electrical system replacements.

This PED request is for design funding for the Seismic Safety Upgrade of Buildings, Phase I, (LBNL), Building Electrical Service Upgrade, Phase II (ANL), Renovate Science Laboratories, Phase I (BNL), and Modernization of Laboratory Building 4500N, Wing 4 (ORNL).

New Project Starts

Environment, Safety and Health:

a. 07-SC-0401 MEL-001-047 Seismic Safety Upgrade of Buildings, Phase I, LBNL

Fiscal Quarter				Total Estimated Cost (Design Only) (\$000)	Full Total Estimated Cost Projection
A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
1Q FY 2007	3Q FY 2008	3Q FY 2008	4Q FY 2010	2,500	17,000

Fiscal Year	Appropriations	Obligations	Costs
2007	2,500	2,500	1,460
2008	—	—	1,040

The proposed Seismic and Structural Safety Upgrades of Buildings, Phase I, subproject will correct existing structural deficiencies in LBNL Buildings 50 and 74, enhancing the safety of over 600 occupants of the seismically deficient buildings. Each of these buildings has been assigned a “Poor”

seismic performance rating per the University of California Seismic Safety rating system. A “Poor” seismic performance rating applies to buildings and other structures whose performance during a major seismic disturbance is anticipated to result in significant structural and non-structural damage and/or falling hazards that would represent appreciable life safety hazards. Proposed upgrades vary by building and include: column reinforcement, new tube bracing, connection and anchorage upgrades, reinforcing interior shear walls, supplemental vertical supports, gap enlargement between structures, new footings, and upgrades to structural exterior walls.

The project is being conducted in accordance with the project management requirements in DOE Order 413.3, Program and Project Management for the Acquisition of Capital Assets.

(dollars in thousands)						
	TEC	OPC, Except D&D Costs	Offsetting D&D Costs	Total Project Costs	Validated Performance Baseline	Preliminary Estimate
FY 2007.....	17,000	325	—	17,325	—	17,325

Compliance with Project Management Order

- Critical Decision-0: Approve Mission Need—3Q FY 2005
- Critical Decision-1: Approve Preliminary Baseline Range—4Q FY 2006
- External Independent Review Final Report—4Q FY 2007
- Critical Decision-2: Approve Performance Baseline—1Q FY 2008
- Critical Decision-3: Approve Start of Construction—3Q FY 2008
- Critical Decision-4: Approve Start of Operations—4Q FY 2010

General Purpose Facilities Projects:

b. 07-SC-0403 MEL-001-049 Building Electrical Service Upgrade – Phase II, ANL

Fiscal Quarter				Total Estimated Cost (Design Only) (\$000)	Full Total Estimated Cost Projection
A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
1Q FY 2007	2Q FY 2008	4Q FY 2008	4Q FY 2011	1,250	17,000

Fiscal Year	Appropriations	Obligations	Costs
2007	1,250	1,250	1,000
2008	—	—	250

This project will upgrade critical portions of the electrical power distribution systems in multiple research buildings (18) and their support facilities (5). It includes medium voltage transfer and feeder switches, area loop switches, overhead lines, panel-boards, transformers, switches, controls and switchgear/bus ducts. It will upgrade the electrical systems to current safety standards, improve systems reliability and performance, and reduce facility maintenance and repair costs.

The project is being conducted in accordance with the project management requirements in DOE Order 413.3, Program and Project Management for the Acquisition of Capital Assets.

(dollars in thousands)						
	TEC	OPC, Except D&D Costs	Offsetting D&D Costs	Total Project Costs	Validated Performance Baseline	Preliminary Estimate
FY 2007.....	17,000	100	—	17,100	—	17,100

Compliance with Project Management Order

- Critical Decision-0: Approve Mission Need—FY 2002
- Critical Decision-1: Approve Preliminary Baseline Range—FY 2007
- External Independent Review Final Report—TBD
- Critical Decision-2: Approve Performance Baseline—4Q FY 2007
- Critical Decision-3: Approve Start of Construction—4Q FY 2008
- Critical Decision-4: Approve Start of Operations—4Q FY 2011

c. 07-SC-0404 MEL-001-050 Renovate Science Laboratories, Phase I, BNL

Fiscal Quarter				Total Estimated Cost (Design Only) (\$000)	Full Total Estimated Cost Projection
A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
2Q FY 2007	3Q FY 2008	4Q FY 2008	4Q FY 2011	3,158	18,000

Fiscal Year	Appropriations	Obligations	Costs
2007	3,158	3,158	1,525
2008	—	—	1,633

This project will upgrade and rehabilitate existing, obsolete, and unsuitable BNL Laboratory facilities into modern, efficient laboratory spaces. This project will revitalize and modernize laboratories in 5 buildings. The scope will include HVAC, electrical, lighting, plumbing, laboratory service, support and work areas, and architectural surface upgrades.

The project is being conducted in accordance with the project management requirements in DOE Order 413.3, Program and Project Management for the Acquisition of Capital Assets.

(dollars in thousands)						
	TEC	OPC, Except D&D Costs	Offsetting D&D Costs	Total Project Costs	Validated Performance Baseline	Preliminary Estimate
FY 2007.....	18,000	200	—	18,200	—	18,200

The Performance Baseline is expected to be validated prior to the use of construction funds. No construction funds will be used until the Performance Baseline has been validated as required by DOE M-413.3-1.

Compliance with Project Management Order

- Critical Decision-0: Approve Mission Need—2Q FY 2006
- Critical Decision-1: Approve Preliminary Baseline Range—4Q FY 2006
- External Independent Review Final Report—TBD
- Critical Decision-2: Approve Performance Baseline—4Q FY 2007
- Critical Decision-3: Approve Start of Construction—3Q FY 2008
- Critical Decision-4: Approve Start of Operations—1Q FY 2011

d. 07-SC-0402, MEL-001-024 Modernization of Laboratory, Building 4500N, Wing 4 Oak Ridge National Laboratory (ORNL)

Fiscal Quarter				Total Estimated Cost (Design Only) (\$000)	Full Total Estimated Cost Projection
A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
1Q FY 2007	1Q FY 2008	1Q FY 2008	3Q FY 2010	2,000	18,000

Fiscal Year	Appropriations	Obligations	Costs
2007	2,000	2,000	1,500
2008	—	—	500

This project is to modernize Wing 4 Building 4500N. This constitutes approximately 25% of the approximately 342,000 square feet contained in the existing structure. Wing 4 provides space for laboratories with the associated offices and the necessary support functions for the researchers. There will be minimal impact to the structural members of the building. In general the interior architectural features of the facility will be demolished. This includes all non-load bearing interior walls, floor and ceiling finishes, furnishings and specialties such as laboratory equipment, toilet room fixtures and partitions, mechanical and electrical equipment.

The project is being conducted in accordance with the project management requirements in DOE Order 413.3, Program and Project Management for the Acquisition of Capital Assets.

(dollars in thousands)

	TEC	OPC, Except D&D Costs	Offsetting D&D Costs	Total Project Costs	Validated Performance Baseline	Preliminary Estimate
FY 2007.....	18,000	260	—	18,260	—	18,260

The Performance Baseline is expected to be validated by 3Q 2007. No construction funds will be used until the Performance Baseline has been validated as required by DOE M-413.3-1.

Compliance with Project Management Order

- Critical Decision-0: Approve Mission Need—March 2002
- Critical Decision-1: Approve Preliminary Baseline Range—FY 2006
- External Independent Review Final Report—3Q FY 2007

- Critical Decision-2: Approve Performance Baseline—3Q FY2007
- Critical Decision-3a: Approve Start of Early Construction (Limited Demolition)—4Q FY 2007
- Critical Decision-3b: Approve Start of Major Construction—1Q FY 2008
- Critical Decision-4: Approve Start of Operations—3Q FY 2010

5. Financial Schedule (dollars in thousands)

	Appropriations	Obligations	Costs
Design by Fiscal Year			
2007.....	8,908	8,908	5,485
2008.....	—	—	3,423
Total, Design PED (07-SC-04).....	8,908	8,908	8,908

6. Details of Project Cost Estimate

See project details.

7. Schedule of Project Costs

See project details.

8. Related Operations and Maintenance Funding requirements

Not applicable for project engineering and design.

(Related Funding Requirements)

Not applicable for project engineering and design.

9. Required D&D Information

Not applicable for project engineering and design.

10. Acquisition Approach

Design services will be obtained through competitive and/or negotiated contracts. M&O contractor staff may be utilized in areas involving security, production, proliferation, etc. concerns.

